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ABSTRACT

The Joint Task Force on Implementing Occupational Options in Wisconsin undertook a 6-month study to identify issues related to occupational preparation, including the state's proposed tech prep and apprenticeship programs, successful policies and practices of tech prep and apprenticeship models to be modified to meet the state's needs, and existing practices that hinder implementing occupational options for students. At six major meetings the group heard presentations from state and local groups concerned about schooling and preparing the future work force, and it coordinated efforts with several other commissions studying education and business concerns. The task force strongly endorsed tech prep programs as a way to prepare students for the future work force. Prior to formulating recommendations, the task force made three key assumptions: that enhanced collaboration among educational systems is desirable; that traditional distinctions between college-bound and noncollege-bound students create barriers to building integrated academic-vocational programs in high schools; and that strong, continuing leadership is required for the innovations recommended in this report. The task force made 10 recommendations of which the following are highlights: (1) all students should have the right to enroll in a tech prep program; (2) the Education for Employment Standard should be strengthened so that all students will have the foundation for tech prep; (3) a 10th-grade performance-based gateway test should be given; (4) business and labor should be encouraged to participate; (5) all high schools and technical colleges should develop articulation; and (6) school funding should be improved. (Appendixes include examples of programs and a glossary. There are 29 references.) (KC)

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ASSURING WISCONSIN'S ECONOMIC FUTURE:

Improving Occupational Options for Youth

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MARCH 1991
REPORT OF THE JOINT WBVTAE/WDPI TASK FORCE ON IMPLEMENTING OCCUPATIONAL OPTIONS IN WISCONSIN

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Improving Occupational Options for Youth

MARCH 1991
REPORT OF THE JOINT
WBVTAE/WDPI TASK
FORCE ON IMPLEMENTING
OCCUPATIONAL OPTIONS
IN WISCONSIN

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Wisconsin Council of Safety — 1923
Wisconsin State Chamber of Commerce — 1929

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Dear Dr. Grover and Mr. York:

On behalf of the Joint Task Force on Implementing Occupational Options in Wisconsin, I am pleased to transmit our final report.

Over the past six months, the Task Force has examined and debated extensively the complex issues surrounding the need to improve the technical preparation of Wisconsin youth. The testimony we have heard, and the labor market information we have reviewed, clearly document the critical need to better prepare youth for the demanding technical careers which are the backbone of Wisconsin's economy. To avoid a major shortage of skilled labor, efforts must be launched to ensure that more than 11 percent of our seniors go on to further technical education or work-based (apprenticeship-like) training. In fact, the Wisconsin Automobile and Truck Dealers Association asserts that a critical shortage of auto service technicians already exists.

The Task Force believes strongly that increased collaboration is needed at all levels. Each of the technical colleges and high schools must move rapidly toward implementing Tech-Prep programs which serve the needs of all students. Leaders from the business and education communities must create new and continuing partnerships which focus on specifying essential student outcomes for employability and career preparation. Vocational and academic educators must integrate their instruction to ensure that both basic academic and technical skills are provided. Further, the education community must work closely with business leaders to provide youth with school-supervised work experiences. Most importantly, we believe that parents, university leaders, and the citizens of Wisconsin must embrace a much broader definition of successful human endeavor, one which values highly the contributions made by technical workers to the economy and quality of life in Wisconsin.

As you know, strong and sustained leadership will be required for these initiatives to succeed. Joint efforts in the legislature and from your state education agencies will determine much of the successful implementation of our recommendations. Members of the Task Force stand ready to assist further in implementing this critically important initiative. Thank you for the opportunity to be of service.

Sincerely,

James S. Haney

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Joint WBVTAE/WDPI Task Force on Implementing Occupational Options

Task Force Charge

The Joint Task Force on Implementing Occupational Options was charged with identifying:

1. *issues related to occupational preparation, including the proposed Tech-Prep and apprenticeship programs;*
2. *successful policies and practices of Tech-Prep and apprenticeship models to be modified to meet Wisconsin's needs; and*
3. *existing practices that hinder implementing occupational options for students.*

Executive Summary

For many young people in Wisconsin, finding viable occupational opportunities after leaving high school is extremely difficult. In today's highly technological workplace, most entry-level jobs require higher levels of problem-solving, mathematical, and critical thinking skills than was the case previously. The 12 percent decline in the number of high school graduates over the past five years has employers extremely worried about maintaining a skilled workforce. With perhaps as many as 1/3 of high school students coming from "at-risk" families (that is, families with children who are not likely to do well in school), the prospects appear bleak for preparing the technical workforce needed to keep Wisconsin businesses competitive in world markets. Despite the existence of numerous high-paying technical career options, at present only 11 percent of Wisconsin's high school seniors choose to pursue technical careers through the technical colleges following high school.

The Task Force on Implementing Occupational Options in Wisconsin was appointed in August 1990 by State Superintendent of Public Instruction Herbert Grover and State Director of the Board of Vocational, Technical and Adult Education Dwight York to examine various issues and alternatives for addressing this problem. The 27-member Task Force was chaired by James S. Haney, President of Wisconsin Manufacturers and Commerce. Leaders from education, business, and labor, along with four legislators, comprised the Task Force. At six major meetings, the group heard presentations from various state and local groups concerned about schooling and preparing the future technical workforce. The work of the Task Force was coordinated with several other commissions studying education and business concerns.

The Task Force cites the critical need for implementing a Tech-Prep initiative in Wisconsin that offers students viable options to the college-prep and general curriculums. Tech-Prep is a series of courses and school-supervised work experiences which prepare students to make the

transition successfully to postsecondary technical education or to work. The curriculum provides a common core of applied academic courses and technical courses which lead toward completion of an associate degree or certificate in a specific technical field. Successful development of these programs is dependent upon close and continuing relationships between high schools, technical colleges, and the business community.

The ten major recommendations outlined by the Task Force build upon DPI's Education for Employment Standard and other recent developments in Wisconsin. The Task Force made three key assumptions prior to formulating recommendations:

1. Enhanced collaboration among educational systems is essential and desirable.

2. The traditional distinctions between college-bound and non-college bound students create barriers to building integrated academic-vocational programs in high schools, and

3. Strong, continuing leadership is required for the educational innovations outlined herein.

Following are the general recommendations of the Task Force:

1. Assure that all students in Wisconsin who demonstrate competence in mastering a set of essential learner outcomes, have the "right" to enroll in a comprehensive Tech-Prep program which includes school-supervised, work-based learning experiences.

2. Revise and strengthen the Education for Employment Standard for all students in K-12 so that the skills, knowledge, and attitudes taught will serve as a foundation for Tech-Prep options in the 11th and 12th grades and postsecondary technical education.

3. Support a 10th grade performance-based gateway assessment as recommended by the Commission on Schools for the 21st Century.

4. Implement in all school districts and VTAE districts by the 1995-96 school year, Tech-Prep program options consisting of the two years of secondary school preceding graduation and up to two years of postsecondary technical education, or continuation in a formal work-based learning program.

5. Encourage business, labor, and employer associations to take active, leadership roles in developing Tech-Prep programs and work-based learning at the local level.

6. Provide state-level leadership in addressing certification issues and implementing a professional development system which supports the implementation of the Wisconsin Tech-Prep initiative.

7. Assure that each local district administrator/superintendent, VTAE district director, and their respective local boards take leadership roles in forming new consortium relationships to implement Tech-Prep options.

8. Structure a regional curriculum development process which assures that each high school and technical college will develop appropriate core courses and establish dual credit and advanced standing options.

9. Establish a Joint Administrative Committee for Educational Cooperation which is appointed jointly by the State Superintendent of Public Instruction and the State Director of the WBVTAE. The major purposes of this standing committee are to monitor the implementation of Tech-Prep and work-based learning programs and to formulate recommendations that assure greater continuity among the UW, VTAE, and secondary educational systems.

10. Encourage WBVTAE and DPI to align all currently available education and employment training funds and to seek additional public and private funds to fully implement Tech-Prep in Wisconsin. ■

The Realities of Leaving High School—Two Stories

Kathryn

Kathryn lives with her mother in a major Wisconsin city. In 1987, a year before graduation, she left high school with no clear employment goals and minimal skills to enter the workforce. During her junior high and early high school years, Kathryn began losing interest in school. By her junior year she was frequently absent because she felt school was worthless, and few contacts were made with her mother about her nonattendance. When it became obvious that she would receive no credit for the courses in which she was enrolled, her counselor suggested that she enroll in a diploma completion program. By working during the day and attending classes at night, she was able to complete high school one semester later than her scheduled graduation.

Kathryn has held several jobs through high school and since graduation. At her first job in a fast-food restaurant, which she held for three or four months, she earned $3.00 per hour. After being unemployed for two months, she began working at a local Mexican restaurant as an appetizer cook where she made $4.25 per hour. Nine months later, she left the restaurant and began working at a dry cleaners, advancing from clerk to assistant manager over the next two years, and earning $5.25 per hour. After becoming disenchanted with the senior manager's tendency to overlook employees' qualifications, she left the job. Currently, Kathryn is again employed at the Mexican restaurant, making $5.50 per hour.

In reflecting on her school and employment record, Kathryn admits to having many reservations about her decisions and choices. Despite the opportunity to advance to kitchen manager at her present job, she is not convinced that working in a restaurant will always satisfy her. Recently she obtained an application to the local technical college from her high school guidance counselor, but is unsure as to which technical field she would like to pursue. Based on her work experience she realizes that certain courses, such as business and interpersonal communication classes, would be beneficial in several careers.

In high school she enjoyed the introductory marketing class she took before entering night school. She wishes she had taken it as a freshman instead of during her sophomore year, as the class may have made the difference in her staying in school. Even though more than five years have passed, she is able to remember the interesting projects, such as managing the school store and conducting a pizza sale. She remembers the teacher as one who began teaching a new lesson or skill by describing its various applications to the real world.

It has taken Kathryn four years to realize that some education beyond high school is necessary if she wants to have a meaningful job and make more than $5.50 per hour. She knows classmates who entered a technical college after high school and are now in jobs making $10.00 and more per hour. Fortunately, Kathryn is no longer satisfied to work in low-skill, low-wage jobs and is beginning to make plans for her own future.

Daniel and Michael

Daniel and Michael live with their parents in east central Wisconsin. Both boys knew in high school that they did not want to go to a four-year college as their counselors had encouraged. Their parents, on the other hand, always encouraged them to work hard in school and stressed the importance of going on to some kind of further education after high school. In high school the boys had excellent teachers who helped them recognize their interest areas and arrange cooperative work experiences, and who encouraged them to continue their education at the nearby technical college. Several of the high school courses they completed were prerequisites for their technical college majors. As a result of their carefully planned high school-technical college education, both are employed in good-paying, high-demand occupations.

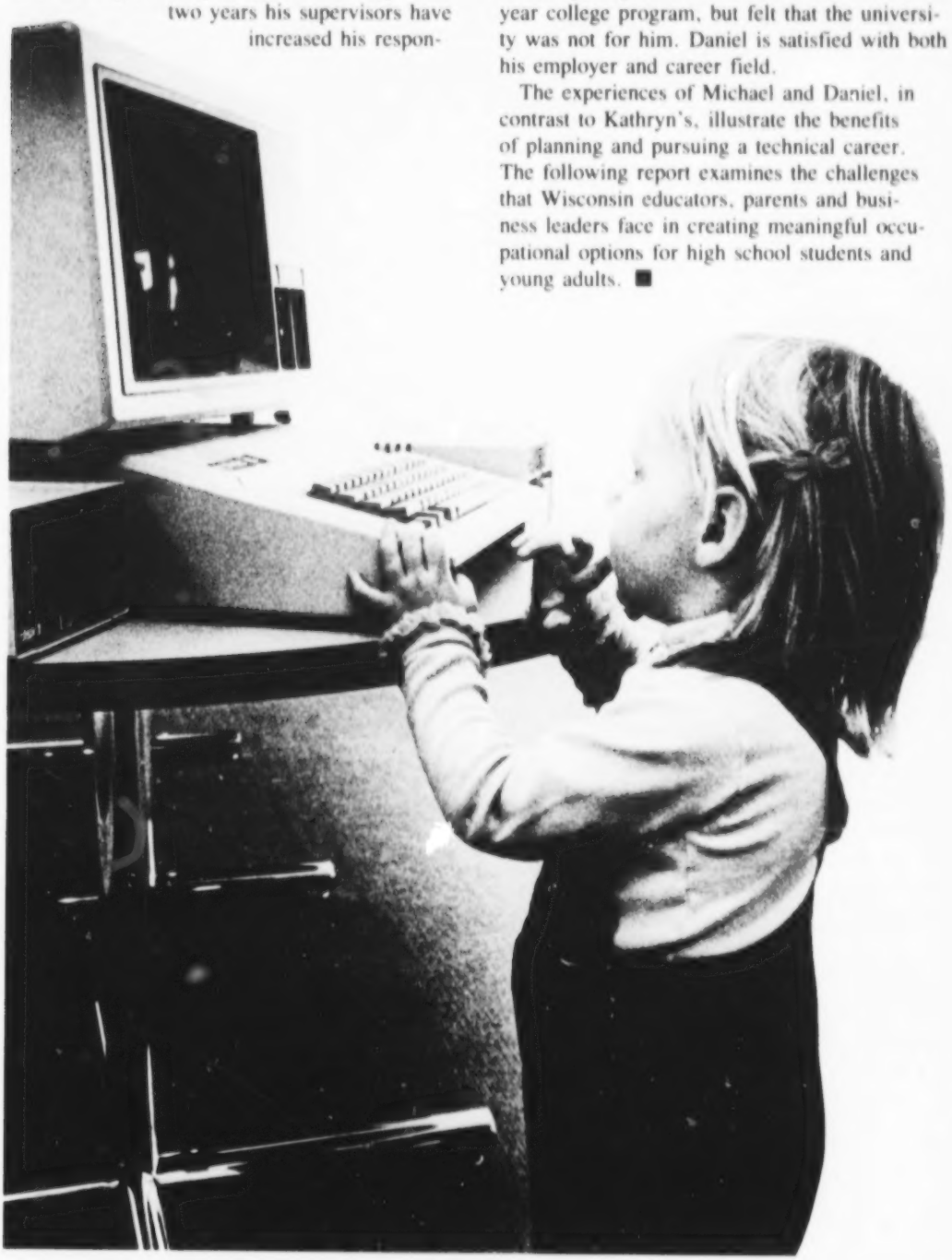
Michael is a 1990 technical college graduate in Mechanical Design. The placement office at the technical college helped him secure his current job with an industial oven manufacturing firm where he earns $9.80 per hour. In high school, Michael took courses in drafting and advanced math areas, as well as the general courses required for graduation. Because of his good grades and affinity for drafting, his counselor strongly encouraged him to attend a

four-year college and major in engineering. However, he was influenced more by his parents and drafting and calculus teachers who suggested he pursue mechanical design.

Daniel is three years older than Michael and graduated from the same technical college with an associate degree in electronics. Currently he works for a high tech information processing firm earning $10.00 per hour. Over the past two years his supervisors have increased his responsibilities. While in high school Daniel had three years of electronics, calculus, physics, and communications, all of which related directly to his associate degree in electronics. In addition to a cooperative work program, Daniel also had a close mentoring relationship with his electronics teacher who influenced his decision to pursue a career in electronics. Like his brother, he was encouraged by his counselor to enroll in a four-year college program, but felt that the university was not for him. Daniel is satisfied with both his employer and career field.

The experiences of Michael and Daniel, in contrast to Kathryn's, illustrate the benefits of planning and pursuing a technical career. The following report examines the challenges that Wisconsin educators, parents and business leaders face in creating meaningful occupational options for high school students and young adults. ■

What does the future hold for her when she enters the workforce in 2008?



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The Challenge

Improving and expanding occupational options for Wisconsin youth is a complex task. First, we must understand and confront three major issues:

- the changing nature of our economy and employment
- the pervasive over-valuing of university education
- the need to provide high quality occupational preparation for *all* students in our increasingly diverse communities.

The Changing Nature of Work

Wisconsin's economic future is dependent upon the skills of our workforce. In today's highly technological and rapidly changing business world, employees at all levels must be creative problem solvers and effective team players. In the past, only 20 to 30 percent of the employees in a business organization were required to plan, think critically, and evaluate tasks associated with work productivity.[1]

As American businesses continue to reorganize in order to remain competitive, all employees will be expected to: learn on the job; use math, science and technology to solve problems; and think critically and creatively. Without technicians and front-line production workers who are highly skilled, it will be extremely difficult in the coming decade to meet the demand for high technology products and quality services.

Several national reports have noted the complex and difficult challenges faced by American business. *America's Choice: High Skills or Low Wages*[2], released in July 1990 by the National Center on Education and the Economy, notes that our nation must develop policies and programs that provide current and future members of the workforce with high-level skills. Unless these skills are developed, the nation's businesses will be forced to export jobs to other countries, leaving only low wage jobs for American citizens. In the competitive businesses of tomorrow, front-line personnel will be responsible for many of the tasks traditionally performed by management, from quality control to scheduling. As work is reorganized, there is a significant increase in the demand for more sophisticated skills, specifically educational skills, such as higher-order problem solving techniques and the capacity for lifelong learning.

Work is becoming more knowledge intensive. Most jobs in the future will require much higher levels of skills in reading, oral communication, analysis, and writing. For example, most new jobs in nursing and mid-level management will require an ability to read journals and manuals, write reports, and understand complex terminology. However, due to the shrinking pool of young workers, the majority of whom will come from homes that are economically and educationally disadvantaged, most new workers will not acquire these skills unless significant educational changes are made. The September 19, 1988 issue of *Business Week*[3] notes that the nation's ability to compete is threatened by inadequate investment in our most important resource: people. Quite simply, too many workers lack the skills to perform more demanding jobs.

Educators have offered some creative, new proposals to address the problem. In *The Neglected Majority*[4], Dale Parnell, President of the American Association of Community and Junior Colleges, argues that a 2+2 or Tech-Prep program is needed that provides four years of concentrated preparation for a technical career during the last two years of high school and two years in a community or technical college. The Tech-Prep program is based on several, new underlying principles: (1) abandoning the assumption that a baccalaureate degree means dignity for all individuals, (2) eliminating the general education track that consists of un-

Changes in the workplace will require workers with advanced technical skills and higher level thinking skills.

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focused learning and fewer marketable skills, (3) striving for excellence at all levels as an imperative, (4) instituting goal-oriented educational programs that have the diversity to match the diversity in students, and (5) achieving a balance between liberal and practical arts is critical to prepare our citizens of tomorrow. Many of Parnell's ideas are reflected in the new Tech-Prep program contained in the recently amended Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1990.

In Wisconsin, similar problems in maintaining a skilled workforce have been reported.

- *Work Force 2000: The Wisconsin View*, a report prepared by Drake Beam Morin, Inc. and released in August 1990, noted that while Wisconsin firms are not currently experiencing a severe labor shortage, they do encounter difficulties in finding qualified health care personnel, engineers, and data processing professionals[5]. Employers participating in the study said they expect that finding skilled labor will be increasingly difficult in all areas, but especially for technical and professional positions. An article cited in the report from the *Milwaukee Journal*[6] noted that "many executives cite a lack of skilled or even trainable people as the Milwaukee area's biggest economic problem."

As the number of jobs requiring post-secondary education increases, the demand for skilled labor is predicted to outstrip the supply.

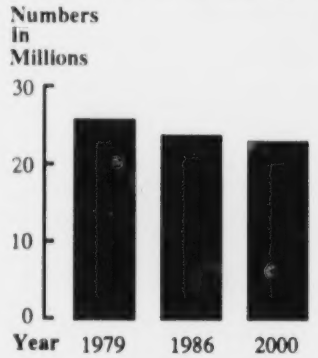
- The Governor's Commission for a Quality Workforce was created in 1989 to examine the growing demand for skilled workers in Wisconsin. As the number of jobs requiring post-secondary education increases, the demand for skilled labor is predicted to outstrip the supply. This Commission has surveyed nearly 3,500 employers to determine the types of skills required of non-managerial employees, the abilities of current and new employees to perform these skills, and the types of new technology and work structures that businesses are developing.

- In 1989, the Wisconsin Council on Vocational Education examined the status of the skilled workforce in the Milwaukee area[7]. Their report from hearings with employers and professionals in the community noted that the current shortage of skilled labor will be extended into the 1990s. Milwaukee employers indicated that an overwhelming number of high school students lack the higher literacy and technical skills needed for future employment or pursuit of higher education.

- A recent study of the metalworking industry found that intense international competitive pressure has led to substantial losses in employment and market position for Wisconsin firms over the past 20 years[8]. The report, prepared by Professors Streeck and Rogers at the University of Wisconsin (UW)-Madison, concludes that addressing skill needs, from basic literacy to more advanced skill competencies, is essential in making metalworking firms competitive and viable.

The problem created by increased demands for higher level technical skills is compounded by the declining number of youth available to enter the workforce. Nationally, the number of youth ages 16 to 24 has declined from 25.5 million in 1979 to 23.4 million in 1986 to an estimated 22.8 million in 2000[9]. Through the 1979-2000 time period, the pool of entry level workers will decline by approximately one-quarter. In Wisconsin, the number of students enrolled in high school has declined from 291,431 in 1981 to 233,885 in 1990—a 24 percent decline in nine years. While the Wisconsin

Chart 1. Number of Youth Ages 16-24



Source: National Center for Education Statistics, *Digest of Education Statistics 1988*. Washington, D.C.: U.S. Department of Education, September 1988.

Department of Public Instruction (DPI) is predicting a one percent annual increase in high school enrollment for the next couple of years, this enrollment growth will not produce a significant number of new members for the workforce[10].

Further, the number of school-age youth living in poverty and single parent homes continues to rise. In 1988, 6,941 children were born to parents under the age of 19 in Wisconsin. During the 1989-90 school year, nearly 2,000 students were in School Age Parent

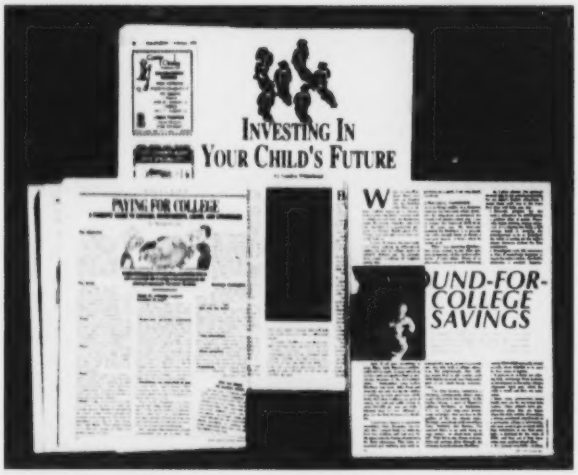
Programs[11]. Teenage pregnancy drastically increases the chances that young women will live in poverty and drop out of high school.

National reports indicate that by the year 2000, as many as one third of all children will be at risk of educational failure[12]. In Wisconsin, this translates to approximately 75,000 high school students. While the number of students in high school is leveling out, an increasing percentage of those who are enrolled come from homes where success in school and the workplace is not valued highly. DPI has implemented several programs in recent years to serve students who are behind in grade level achievement, truant, or who have dropped out. Specific data on the numbers of students needing these programs are difficult to compile, but educators frequently acknowledge the rapidly growing need for programs and services for these students.

The Pervasive Over Valuing of University Education

Our society continues to place a high priority on preparing for college. According to DPI, approximately 52 percent of the graduating seniors enroll in baccalaureate degree programs immediately after high school[13]. However, ten years later only half have completed a degree. After five years, only 39 percent of the 1984 freshmen had graduated[14]. The students drop out for a variety of reasons including: lack of ability to complete college-level work, changes in career plans, marriage and economic problems. Approximately 13,000 to 15,000 young people who are ill prepared for the demands and challenges of university life graduate from Wisconsin high schools each year. Many also are not sufficiently skilled to be successful in the job market when their college career plans are altered. This lost productive capacity in our shrinking, young workforce is simply unacceptable if Wisconsin businesses are to remain competitive.

In Wisconsin, only 11 percent of high school seniors enroll in a technical college after graduation[15]. Nationally, 22 percent of high school graduates enroll in a two-year technical or community college the following fall[16]. High schools continue to gauge their success by the college admission test scores of their seniors, National Merit Scholars, and the number who choose to attend four-year colleges and universities. Most of the literature read by parents describes ways to save for their child's college education and to choose a quality university. Tragically, going to work, into an apprentice program, or to a technical college is viewed as a "second class" achievement. Parents, high school counselors, and students need to consider the full array of options that can lead to successful employment. Labor market projections and earnings data are valuable resources and should be carefully considered along with other information.



Popular reading materials that emphasize enrollment in a four-year college for all students.

The 1988-2000 occupational projections of the Wisconsin Department of Industry, Labor, and Human Relations (DILHR)[17] include the following trends:

- Employment for technical workers, professionals and paraprofessionals will grow 23.3 percent by 2000, representing approximately 95,000 new jobs.
- Opportunities will also grow rapidly in the service occupations (22 percent), sales and sales related fields (22 percent), and management (17 percent).
- Nearly 27,000 new jobs will be created in the health industry and an additional 13,000 new jobs in the business services industry.

In response to a critical shortage of entry-level technical employees, the Wisconsin Automobile and Truck Dealers Association has mounted a campaign to recruit 700 young people annually for "rewarding and satisfying careers as professional vehicle technicians."[18] As part of their public awareness campaign, dealerships will be providing scholarships to high caliber high school students who pursue automotive technology programs at the technical colleges.

According to recent follow-up surveys, grad-

uates of the technical college associate degree and diploma programs reported the following earnings in 1989[19]:

Earnings of 1989 VTAE Graduates

Program Areas	Earnings
Associate Degree Graduates	
Supervisory Management	$25,750
Nursing	23,500
Dental Hygiene	22,600
Computer Information Systems	22,500
Visual Communications	19,500
Electronics	19,200
Vocational Diploma Graduates	
Electric Power Distribution	23,300
Machine Repair	22,000
Airframe & Powerplant Mechanics	21,300
Air Conditioning, Heating, & Refrigeration	18,700

Source: Wisconsin Board of Vocational, Technical and Adult Education, *1989-90 Graduate Follow-up Report*, Madison, WI: Wisconsin Board of Vocational, Technical and Adult Education, April 1990.

In several fields, these earnings compare quite favorably with those received by graduates of baccalaureate programs in similar fields. For instance, baccalaureates from UW-Madison in information systems are entering the job market at $27,860, while graduates in management are averaging $23,700 as a beginning salary[20].

Several labor market studies[21] indicate that by the end of the decade, 80 percent of all jobs will require formal education beyond high school, but less than a baccalaureate degree. As businesses continue to provide more training and educational opportunities for their employees, lifelong learning will become an essential aspect of all work. As a society we need to value *the ability to learn and grow*, regardless of the type of work being performed. Increasingly, plumbers, nurses, child care providers, engineers, and computer operators need to understand how to use new information and technology in their work. Indeed, their ability to provide high quality services and products for their customers will depend directly on their ability to learn and apply new knowledge in their work.

As a society we need to value the ability to learn and grow, regardless of the type of work being performed.

The increased analytical, communication, and problem solving demands of nearly all jobs should be reflected in the status we accord the occupation. As occupations increase in their status, productivity is likely to increase, especially in what are now considered low-status occupations. One of the important challenges facing employers is finding ways to restructure low-status jobs to make them more stimulating and challenging. As technology influences our lifestyles and work and as the character of the American family changes, it is essential that we develop a new definition for "success." At the heart of this definition must be the recognition that a technical career represents a valued contribution to the economy, our community and, most importantly, our self-worth.

Providing Quality Occupational Options for All

From Milwaukee to La Crosse to Rice Lake, it is clear that Wisconsin communities and workplaces are highly diverse. Given the diverse nature of employment opportunities (both in number and types of jobs) and the educational resources to prepare youth for work, perhaps the biggest challenge we face is assuring that *all* graduates of high schools and the technical colleges are prepared to enter an occupational field with the skills and knowledge required to be successful.

A majority of high school students can benefit from school-supervised work experience programs (see glossary) which enable them to relate mathematics, science and communications concepts to real work and life situations. The programs also provide opportunities to explore various career options, develop appropriate work values and ethics, teach responsibility, and earn money and credit. For all students, especially at-risk youth, such programs provide valuable opportunities to have positive adult role models. However, offering such opportunities is exceedingly difficult in urban areas when employment rates skyrocket due to plant closures or major layoffs. It is equally challenging to develop such programs in many of the northern, rural communities where most of the economy is based on small, family-run seasonal businesses.

For students who are unable, for whatever reason, to enter postsecondary education, the opportunities to participate in work-based learning programs (see glossary) are very limited. The traditional apprenticeship programs in the building, metal and printing trades, represent a notable exception. Through a rigorous program of on-the-job training and related classroom instruction, thousands of young people have acquired world-class skills in their chosen craft. Other young people entering the workforce out

of high school, need and deserve similar opportunities in other occupations for which there is no established training program. The "learning-by-doing" approach to gaining knowledge is also becoming more widely accepted and valued within our education systems. Efforts are underway to develop new apprenticeship programs in water quality control, automotive service and other fields.[22]

Improving access to apprenticeships for women and people of color has also been a thrust of the Wisconsin AFL-CIO and DILHR in recent years. For these individuals who will comprise the majority of our new workforce between now and the year 2000, apprenticeship training can provide an important entré to the labor market. Expanded apprenticeship and similar technical training programs sponsored by business and labor in cooperation with secondary and postsecondary education are urgently needed.

The U.S. Department of Labor has recently announced a major effort to strengthen and renew apprenticeship and similar work-based learning programs to address the growing shortage of skilled labor.[23] At the urging of DPI and the Governor, the Legislature is currently considering a proposal to allocate $500,000 which will create and expand apprenticeship opportunities for youth under the age of 21. This initiative will significantly enhance school-to-work transition and occupational opportunities for Wisconsin youth.

For students who are uncertain about their futures beyond high school, understanding the maze of technical college and university options is extremely difficult. Most parents are unaware that in some school districts, high school students can earn technical college credit through various agreements that have been initiated in recent years. (The following section describes several of these programs.) In addition, many parents continue to believe that a baccalaureate degree is the only route to success. These parents often downplay the rewarding and satisfying careers that can be undertaken through associate degree and diploma programs in Wisconsin's technical colleges. Many counselors are unaware that three of the technical colleges (Milwaukee, Madison, and Nicolet) offer college parallel programs that readily transfer credit to the UW System as well as four-year institutions outside Wisconsin. The challenge in pursuing these options comes in providing effective career guidance and counseling to assist students in making informed choices.

Over the years only a few education professionals and policy makers have recognized the important role that vocational-technical courses in high school play for students planning to attend universities. Students planning to major in professional fields—such as medicine and the allied health professions, child and family psychology, architecture, accounting, engineering, and management—benefit enormously by completing one or two courses that introduce them to concepts, basic processes and materials, and career ladders within their fields. Providing more and appropriate guidance and career awareness opportunities in elementary and middle school allows more students to explore various professional fields using high school vocational-technical courses. ■

For students who are uncertain about their futures beyond high school, understanding the maze of technical college and university options is extremely difficult.

The Possibilities

Throughout its investigation, members of the Task Force heard numerous presentations about existing programs and special initiatives designed to enhance occupational options. Each of these offers exciting possibilities for Wisconsin youth. The future looks promising if these insightful and creative programs can be adopted statewide.

Building Strong Foundations for Learning

Youth need a solid grounding in basic and academic skills to develop high level technical skills. The Education for Employment Standard, which was adopted by DPI in 1985 contains many of the elements youth need to pursue further technical education. For the past two years, school districts have been planning programs designed so that *all* students (K-12) have access to:

- business and education partnership activities;
- practical applications of basic skills;
- career exploration, planning, and decision making;
- employability skills and attitudes;
- school-supervised work experiences;
- knowledge of business operations and economics, and
- contemporary vocational programs.

The Education for Employment initiative has already received national recognition for linking educational reform directly to the world of work and economic development.

Beginning in the 1991-92 school year, each district is to have an Education for Employment program, which is approved by the State Superintendent of Public Instruction. The program's development is to be overseen by a local or regional council that draws at least half of its members from the business community. Each district also must employ or appoint an Education for Employment Coordinator. As will be noted in the Recommendations, several aspects of this new statewide mandate must be built upon and supported fully by the education and business community. If this effort is fully implemented and supported with state appropriations, Wisconsin will again be recognized for its national leadership. The Education for Employment initiative has already received national recognition for linking educational reform directly to the world of work and economic development.

DPI has also provided leadership in formulating the Wisconsin Developmental Guidance Model[24] which enables schools to meet the standards requiring the provision of comprehensive counseling and guidance services to all students. Developmental guidance is based on the premise that all children progress through a series of developmental stages. For each of the developental stages, a series of competencies has been identified for grades K-12. The competencies pertain to personal and social growth, learning, and career and vocational development. Guidance and teaching activities are implemented in each of these areas to help students learn and apply the competencies. The guidance program manager and counselors work as a team with school staff, parents and community members to deliver the developmental Guidance program. The Developmental Guidance Model systematically teaches students about the world of work and ways to make informed decisions about occupational options and career planning.

The Wisconsin Career Information System (WCIS), operated by the UW-Madison for the past fifteen years, has developed a wealth of materials and resources. The majority of Wisconsin high schools and technical colleges pay an annual WCIS membership fee to receive a series of publications, computer programs, and videos containing the latest labor market information and related educational information. Guidance counselors and teachers throughout the state have found WCIS to be a valuable resource for implementing the Wisconsin Developmental Guidance Model and the Education for Employment Standard.

Full implementation of the Guidance and Counseling and Education for Employment Standards is vitally important for successful transition from high school to postsecondary education or work for all students.

Developing Joint Programs

Several technical colleges and high schools throughout Wisconsin have begun to develop and implement innovative approaches to preparation for technical careers. Many of these programs were developed through federal grants from DPI and the Wisconsin Board of Vocational, Technical and Adult Education (WBVTAE). Approximately $500,000 has been available for model demonstration and imple-

mentation projects for the past six years.

Beginning in 1986, the Oshkosh Area School District and Fox Valley Technical College (FVTC) provided instructors from several technical fields to jointly develop a competency-based curriculum, which is incorporated into high school courses. High school credit and Vocational, Technical and Adult Education (VTAE) credit are offered for beginning level technical college courses, which are taught by high school instructors and coordinated with FVTC instructors. High school students are registered in the FVTC course and receive a transcript for the work successfully completed.

Upon enrolling at FVTC, students are given advanced standing (see glossary) based on the courses completed in high school. At least once during each semester, students enrolled in dual credit courses (see glossary) are taken to FVTC for additional specialized instruction and to become acquainted with the various career options in their fields of study. To date, four dual credit courses have been developed in the following areas: accounting, introduction to computers, information processing, and applied metals/blueprint reading machine tool. Several others are currently being planned. One of the important elements of this joint effort is the initial and continuing meetings between the FVTC administrators and school district administrators. Both board presidents signed a contract signifying their leadership support.

Last year more than 450 high school students in the Moraine Park Technical College district (Fond du Lac) received technical college credit for courses they completed. For the past four years the technical college and nearby high schools have jointly offered courses based on the college's curriculum. Students receive both high school and technical college credit in courses such as accounting, data processing, human relations, and sociology. Currently, the technical college staff and local administrators are developing a 2+2 program leading to an associate degree and an occupation-specific Vocational Diploma Plus program, which prepares students to enter the workforce following graduation from high school or a technical college program.

This past summer, instructors and administrators from Gateway Technical College and three high schools (Badger, Delavan-Darien, and Elkhorn) participated in a three-day workshop to develop a model Tech-Prep program. The workshop was structured to exchange ideas and discuss the Tech-Prep concept. Small work groups identified the barriers and benefits of developing a Tech-Prep program. In addition, instructors from both levels developed model programs for technology, business, and health and human services. Workshop evaluations indicated that face-to-face interaction among staff from the high schools, Gateway, DPI and WBVTAE was the most important element in developing the program model.

These are just three examples of the exciting developments occurring across the state in an effort to improve secondary and postsecondary occupational options for youth.

Building a Capacity for Lifelong Learning

As the workplace requires more knowledge and new skills, formal and informal learning will become a lifelong endeavor. Nationally, the private sector spends about $30 billion annually for employee training and development, which compares quite favorably with the $80 billion spent on higher education (four-year colleges and universities) in the U.S.[25] Unfortunately, the American Society for Training and Development estimates that nearly 50 million members of the current workforce need additional formal training. Seventeen million will need training in new technologies, while 16 million will need basic skills. The rest will require executive, supervisory, and customer service skills[26]. Businesses throughout Wisconsin will need to assure that their employees have greater access to the technical college and university campuses if they are to remain competitive.

New technologies will require new training.

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VTAE System efforts to develop workplace literacy programs have also helped business and industry meet their workforce training needs.

Through apprenticeship programs, customized training programs for industry, and economic development initiatives, the technical colleges have served many of the needs of technical employees for the past 80 years in Wisconsin. The efforts of the VTAE System to develop workplace literacy programs have also helped business and industry meet their workforce training needs.

The VTAE and UW Systems have recently expanded discussions regarding the transfer of credit. Generally, students can request to transfer up to half of the semester hours required for a degree. In all cases, however, the receiving institution evaluates the courses to ensure they are comparable in quality and content. As students pursue postsecondary education at either level, the options for transferring credit appear to be expanding. This will permit students and technical employees to have greater access to appropriate technical or professional education.

Integrating the Business and Education Communities

Through the Education for Employment initiative, a number of outstanding partnerships between business leaders and educators have been established. The Governor's Council on Business and Education Partnerships, which oversees the Education for Employment Standard statewide, provides more than symbolic leadership. With their guidance and assistance, similar local or regional councils have been established in 350 communities.

Wisconsin Manufacturers and Commerce (WMC) has sponsored a number of conferences and programs designed to facilitate dialogue between business and education leaders about important educational issues. The association's members have been actively involved in 80 percent of the business/education partnership councils throughout the state. For the past nine years, the WMC-sponsored Business World program has brought high school students, teachers, and business people together to discuss business and economics in an effort to better prepare students to contribute to society and the workplace. Business World is a one-week session held during the summer on two different university campuses.

Historically, cooperative vocational education programs have been the primary means used by high schools to expose students to the work world. Unfortunately, only a few students have access to these programs, which provide excellent opportunities to gain high school credit and school-related learning experiences through work. A major component of the Education for Employment Standard is to provide supervised work experience programs for all high school students. Specifically, these programs provide planned work and community experiences that enable students to develop knowledge, skills and attitudes for work and other life roles. Developing and managing these programs leads to continuous, indepth communication between employers and educators on key educational issues and workplace needs.

Programs that help teachers stay abreast of changes in the work world have also been started in Wisconsin. The Wisconsin Occupational Competency Program provides funding for VTAE instructors and high school teachers to become engaged in summer experiences in business and industry. These brief internships enable instructors to gain new insights regarding technology and workplace developments. Under a federal grant, the UW-Stout conducted a High Technology Training Project, which placed instructors from all subject areas in business and industry for several weeks during the summer. The teachers used this time to develop curriculum modules on new technological innovations and processes used in industry.

Integrating Academic and Vocational Learning

Several recent efforts in Wisconsin have worked to eliminate stereotypes that segregate and devalue vocational learning from academic learning. For example, the Education for Employment and Guidance and Counseling Standards are described as programs for "all" students. These efforts recognize that all students need to experience practical applications of the "new basics" to be adequately prepared for the work world and/or further education.

State Superintendent of Public Instruction Herbert Grover has spoken frequently about the critical need to provide all students with the employability skills they need to enter today's technology-intensive world. State Director of WBVTAE Dwight York has proposed that the VTAE System open its technical or general education courses to qualified, 16-to-18-year-old high school students. This option would broaden

choices and allow students to create a "personally relevant" sequence of courses.

The DPI offers consultant services to schools interested in implementing new curriculums that provide applications for academic subjects such as applied mathematics, applied communications, principles of technology, and others. Many schools are seriously considering adopting approaches that systematically demonstrate the ways in which math and communication concepts are tied to occupational tasks.

The Wisconsin Association of Secondary Vocational Administrators recently released a position paper entitled: *Changing the Process for Teaching Basic Skills*[27]. The paper outlines several innovative strategies for enhancing the integration of basic skills in vocational courses. Team-teaching arrangements, a common planning time, joint projects (e.g. technology education classes building the set for a school play), and incorporating economic education throughout the curriculum are some excellent examples of ways vocational and academic learning can be integrated. ■

Tech-Prep in Wisconsin

Key Assumptions

The recommendations that follow are based on several key assumptions. These assumptions reflect our consensus view of the issues associated with providing high quality occupational opportunities for Wisconsin youth. If one has difficulty in endorsing these assumptions, some or all of the recommendations are likely not to be considered feasible or appropriate by the reader.

1. We believe that full collaboration among all educational systems is essential. Without genuine communication and active cooperation at all levels, Tech-Prep programs will not succeed. Educators, business community leaders, and parents must work cooperatively in defining, improving, and evaluating programs that emphasize important student outcomes.

2. We believe that the traditional distinctions made between vocational, general track, and college bound students are counter productive to developing new educational approaches. All students, in both the secondary and technical college systems, need high quality options which prepare them to enter the labor force at their highest possible levels of skill. Instead of focusing on the destination after high school, educational programs must focus on the outcomes that educators, the business community, and parents deem appropriate for entering the work world or the next level of education.

3. We believe that strong and continuing leadership is required if the recommendations are to become reality. Substantial and adequate resources from the Wisconsin legislature will be a necessity. Most importantly, Wisconsin education and business leaders at the state and community levels must demonstrate their support for these programs with appropriate decisions and resources.

A Definition for Tech-Prep in Wisconsin

The Task Force provides the following definition of Tech-Prep to guide the future development of policy and programs in Wisconsin. Tech-Prep encompasses all the areas of vocational-technical education, including agricultural education, business education, family and consumer education, marketing education and other technical courses of study. The definition embraces several key concepts found in programs that effectively transition students from high school to postsecondary programs and work.

> Tech Prep is a sequence of courses and experiences designed to provide high school graduates with a more technically oriented background to enable them to make successful transitions from school to postsecondary technical education or to work. Tech-Prep combines a common core of applied academic courses and technical courses at the high school level. Through these integrated curriculums students will acquire the higher levels of skills required in the emergent workforce. These curriculums provide for cooperation between high schools, technical colleges and the business community leading toward completion of an associate degree, diploma, or certificate program in a specific technical field.

This definition is broader in focus than the definition for Tech-Prep Programs found in Title IIIE of the Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1990[28]. It would allow any program meeting the Wisconsin standards to receive federal funds under the Act. The federal definition is as follows:

> Tech-Prep Education Program means a combined secondary and postsecondary program which:
>
> a. leads to an associate degree or 2-year certificate;
>
> b. provides technical preparation in at least one field of engineering technology, applied science, mechanical, industrial, or practical art or trade, or agriculture, health, or business;
>
> c. builds student competence in mathematics, science, and communications (including through applied academics) through a sequential course of study; and
>
> d. leads to placement in employment. ■

RECOMMENDATIONS

The following recommendations serve as the major initiatives proposed by the Task Force. At both the state and local levels, considerable resources and strong, sustained leadership will be needed if improved and expanded occupational options are to be provided for Wisconsin youth.

State Policy Recommendations

1. Assure that all students in the state of Wisconsin who demonstrate competence in a set of essential learner outcomes defined through the Education for Employment Standard have the "right" to enroll in comprehensive Tech-Prep programs which include school supervised, work-based learning experiences. To accomplish this, the state must:

a. develop language that redefines the Education for Employment Standard (Section 121.02(1) of Wisconsin Statutes). Further, this statutory language must clarify the relationship of the Education for Employment Standard to the Tech-Prep initiative, occupational options, and other educational programs.

b. assure that students with exceptional education needs have access to comprehensive and individually appropriate Tech-Prep programs as noted in their Individualized Education Programs, or IEPs (see glossary).

c. assure that educationally disadvantaged and at-risk students have access to comprehensive and individually appropriate Tech-Prep programs.

d. change VTAE and DPI statutory language as follows:

VTAE—Amend Chapter 38.12, District board duties by adding:
38.12 "(12) The district board shall collaborate and coordinate with the school districts in its boundaries to establish a Tech-Prep program in each high school."

DPI—Amend Chapter 120, School Board Duties, by adding:
120.12 "(21) Tech Prep. Collaborate and coordinate with the local VTAE district to establish a Tech-Prep program."

In keeping with the revision to 120 described above, it would be appropriate to amend the State Superintendent's general duties as follows:

115.28 "(28) Tech Prep. In collaboration with the State Board of Vocational, Technical and Adult Education, assist school districts in developing and coordinating a Tech-Prep program between each high school and its VTAE district."

2. Revise and strengthen the implementation of the Education for Employment Standard for all students in K-12 so that the skills, knowledge, and attitudes taught will serve as a foundation for Tech-Prep options in the 11th and 12th grades and postsecondary technical education. Specifically, statutory language should be changed in the Education for Employment Standard to provide access to competency based courses and/or programs through the following legislation:

Chapter 121 of the School District Standards

121.02(m) Education for Employment. "Provide access to an education that offers alternative opportunities for occupational success through job preparation, technical preparation, and college preparation that has been approved by the State Superintendent."

3. Support a 10th grade performance based gateway assessment (see glossary) as recommended by the Commission on Schools for the 21st Century with the addition of appropriate Education for Employment outcomes as a prerequisite for entry into Tech-Prep and work-based learning programs.

a. This recommendation supplements and reinforces recommendations 201A, 201E, and 201F prepared by the Commission on schools for the 21st Century[29]:

201A The Commission recommends that Wisconsin adopt a set of common, essential learner outcomes which all students are expected to master and which reflect the philosophy of outcome based education. This set of learner outcomes

includes the following major categories: (1) academic foundations, (2) analytic skills, (3) human relations, (4) personal growth, (5) global participation, (6) career and occupational awareness, and (7) citizenship.

201E The Commission recommends that a framework of assessment procedures and instruments be designed to align with the seven major categories of learner outcomes listed in 201A. These should include multiple, authentic, performance-based measures for displaying demonstrated student mastery of learner outcomes. These measures should be used for diagnostic purposes in order to insure that developmentally appropriate curriculum experiences are provided for each student.

201F The Commission recommends that ongoing assessment of student mastery, from the beginning to the completion of formal schooling, constitute an integral part of the learner outcome-based education system. In addition, the Commission recommends formal, bench mark performance-based assessment at the following grade levels/ages:

1. 3rd grade (ages 8-9) assessment of essential outcomes;
2. 6th grade (ages 11-12) assessment of essential outcomes;
3. Interest, ability, and aptitude assessment provided through guidance and counseling services during grades 7-9 (ages 13-15);
4. 10th grade (ages 15-16) assessment of essential outcomes; and
5. Ongoing assessment of student performance in branching options during grades 11-12 provided through guidance and counseling services.

b. It is imperative that business, industry, and labor representatives be involved in the development of the common learner outcomes and their assessment.

c. In accordance with federal and state policy, the assessment must not discriminate on the basis of handicap, race, sex, ethnic origin, sexual orientation, or economic status.

d. Students who fail to master the 10th grade gateway assessment must be provided with comprehensive and appropriate remedial or special education and support services designed to enhance their performance of the essential outcomes.

4. Implement in all school districts and VTAE districts by the 1995-96 school year, Tech-Prep program options consisting of the two years of secondary school preceding graduation and up to two years of postsecondary technical education, or continuation in a formal work-based learning program. Each program must include:

a. a common core of applied skills in mathematics, science, communications, computer applications, and technologies preparing students for success at the associate degree, diploma, or certificate level in specific career fields or in the workforce.

b. school supervised work experience, where appropriate, as an integral part of the curricular objectives and instruction at both the secondary and postsecondary levels.

c. formal transcripts, special certificates, and/or pupil portfolios that document student participation and completion of a Tech-Prep program which are acceptable to employers. (This recommendation relates to Recommendation 201G of the Commission on Schools for the 21st Century which calls for the development of an Individual Pupil Portfolio (IPP) for every child.)

d. an ongoing marketing and information plan that informs students, parents, teachers, counselors, and employers about Tech-Prep early in the educational process and no later than the middle school. Guidance counselors must play a key role in the delivery of this information.

5. Encourage business, labor, and employer associations to take active, leadership roles in developing Tech-Prep programs and work-based learning at the local level. To do this, they must:

a. be involved directly in school supervised work experience programs.

b. offer additional, formal work-based learning and technical training programs which enhance opportunities for young adults to gain technical skills while working.

c. identify and validate learner outcomes for Tech-Prep programs, as specified in Recommendation 3b.

d. support apprenticeship as another occupational option.

e. participate in Education for Employment councils and/or subject area advisory committees.

f. promote with the general public, in their respective communities and statewide, the value of and need for technically skilled labor.

g. provide information about current and future labor market and skill needs.

6. Provide state-level leadership in addressing certification issues and implementing a professional development system which supports the implementation of the Wisconsin Tech-Prep initiative.

a. In consultation with appropriate organizations and groups, the VTAE System and DPI must develop and implement a comprehensive program to teach all secondary and postsecondary counselors, teachers, dministrators, and teacher educators effective strategies for implementing the Tech-Prep initiative.

b. Changes in the personnel certification codes of the VTAE System and the DPI must be studied jointly. A joint certification review committee should be appointed consisting of DPI and VTAE representatives. The intent of these changes should be to develop reciprocal certification that recognizes the importance of recent role appropriate, and diversified work experience for all educators. The VTAE certification code should be revised to permit teachers who hold DPI certification to teach Tech-Prep dual credit courses in secondary institutions that have Tech-Prep dual credit agreements with their area technical college. The DPI certification code should be revised to permit teachers who hold VTAE certification to teach Tech-Prep dual credit courses in secondary institutions that have Tech-Prep dual credit agreements with their area technical college.

c. Require all teachers/instructors, counselors, and administrators at both the secondary and postsecondary levels to complete planned internships in business and industry once every five years.

i. Establish relationships with cooperating businesses and governmental agencies to sponsor teacher interns.

ii. Use the Education for Employment Business and Education Partnership Councils to facilitate internship and curriculum revision activities.

d. Develop a statewide program which provides opportunities for counselors and secondary teachers from academic and vocational-technical subject areas to complete observation and internship programs at the technical colleges.

Local Programmatic Recommendations

7. Each local district administrator/superintendent, VTAE district director, and their respective local boards must take leadership roles in forming new consortium relationships to implement Tech-Prep options.

8. Structure a regional curriculum development process which assures that each high school and technical college will:

a. develop a rigorous and comprehensive core of applied academic courses.

b. revise vocational-technical course curricula to include appropriate emphasis on basic skills and applied principles in mathematics, communications, and science.

c. encourage and implement dual credit and/or advanced standing options.

d. assure that all Tech-Prep curriculums, both academic and vocational-technical, are jointly developed and competency based.

e. identify a coherent sequence of courses leading to specific career fields.

f. establish and maintain a specific funding mechanism for curriculum and staff development.

g. establish subject area advisory committees for Tech-Prep programs which include representatives from both the technical and academic areas at the secondary and postsecondary levels.

h. develop and maintain transitional services for all students with exceptional education needs as prescribed in federal legislation.

Structural and Implementation Recommendations

9. Establish a Joint Administrative Committee for Educational Cooperation (JACEC), which is appointed jointly by the State Superintendent of Public Instruction and the State Director of the WBVTAE. The major purposes of this standing committee are to monitor the implementation of Tech-Prep and work-based learning programs and to formulate recommendations that assure greater continuity among the UW, VTAE, and secondary educational systems.

The State Superintendent and the State Director shall jointly appoint committee members to staggered three-year terms and assure that appropriate constituencies, including faculty members, are represented. The specific duties of the JACEC are to:

a. evaluate the implementation of Tech-Prep and work-based learning programs statewide and offer recommendations to the state agencies and their respective governing boards for improving policy, expanding regional implementation, and assuring adequate fiscal support.

b. assist the 16 regional joint articulation committees to focus on implementation of the Tech-Prep initiative.

c. examine and monitor specific issues such as: the acceptance of applied academics and Tech-Prep courses taken in high school to meet college entrance requirements, strategies for expanding the transfer of credit between the VTAE and UW Systems (in collaboration with JACAP), and the development of 2+2+2 programs.

d. develop model Tech-Prep programs to prepare minority youth for postsecondary training and the world of work.

e. develop a statewide marketing plan for the Tech-Prep and work-based learning initiatives.

f. establish and monitor timelines for the implementation of the Tech-Prep initiative.

g. prepare and issue a biennial report on the status of Tech-Prep implementation in Wisconsin.

h. within six months of its appointment, formulate a *Strategic 5-Year Plan* for implementing and monitoring the Tech-Prep initiative. This plan should include provisions for:

i. developing operational guidelines for VTAE districts and schools.

ii. developing performance standards and measures for assessing the extent of Tech-Prep implementation.

iii. monitoring the leadership and professional development initiative outlined in Recommendation 6.

10. The VTAE System and DPI must align available resources from all existing education and employment training funds and seek additional public and private funds to implement fully Tech-Prep in Wisconsin.

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Appendices

A. Work of the Joint WBVTAE/WDPI Task Force on Implementing Occupational Options

In July 1990, State Superintendent of Public Instruction, Herbert Grover and State Director of WBVTAE, Dwight York, appointed the members of the Joint WBVTAE/WDPI Task Force on Implementing Occupational Options. James S. Haney, president of the Wisconsin Manufacturers and Commerce was asked to serve as chair for the 27 member Task Force. The Task Force was charged with:

(1) identifying issues related to occupational preparation which include the Tech-Prep and Apprenticeship programs;

(2) identifying successful policies and practices from the Tech-Prep and Apprenticeship models that can be adopted or adapted to meet Wisconsin's needs; and

(3) identifying policies and practices which inhibit effective implementation of occupational options for students.

Between August 1990 and January 1991, the Task Force held six meetings. Presentations on Tech-Prep initiatives and work of other commissions and groups were made at the meetings. (For a summary of the presentations, see section on "Exemplary Programs and Initiatives in Wisconsin.") A portion of each meeting was devoted to discussing issues related to Tech-Prep, with the following work groups developed to facilitate this discussion: (1) integrating work and education, (2) integrating vocational and academic learning/instruction, (3) integrating/coordinating the educational delivery system, and (4) developing and integrating new perceptions about the dignity of all forms of work. Each group identified the implications Tech-Prep would have for their topic area pertaining to organizational changes, curricula, policy, funding, instruction, teacher education, and guidance and career functions. Group facilitators synthesized the information that was continuously refined by group members.

In October, a letter from Chairman Haney soliciting information and feedback on Tech-Prep efforts was sent to 2,000 individuals and groups concerned with Tech-Prep issues. Secondary school principals, district administrators, local vocational education coordinators, Education for Employment coordinators, CESA administrators, and school board presidents received the letter. The letter was also sent to postsecondary personnel, including district directors, district board chairpersons, and curriculum directors. In addition, all Chamber of Commerce presidents and JTPA coordinators were asked for feedback. Thirty-six individuals or groups responded to the information request, and their feedback was considered by the work groups.

In November, work group issues were presented to the entire Task Force and the process of developing preliminary recommendations began. Through numerous discussions and meetings with Task Force members, DPI staff members, and VTAE staff members, the recommendations and report outline were developed. At the January 14, 1991 Task Force meeting, members present unanimously accepted the ten recommendations in this report pending incorporation of feedback received at the meeting. Following final revisions, Task Force members reviewed and signed off on the report which was then transmitted to DPI and the WBVTAE.

B. Exemplary Programs and Initiatives in Wisconsin

The following paragraphs describe exemplary efforts designed to better prepare students for entering into the workforce and enhancing our Nation's position in the world marketplace. Speakers representing each of these programs or commissions made presentations at Task Force meetings held in August through November 1990. Along with the summary of each presentation, a contact person is provided for further information.

VTAE/High School Articulation through TECH-PREP

Judy Neill of Moraine Park Technical College described the occupationally focused instruction provided to high school students in their own high schools. Students earn both high school and VTAE credit for the completed courses that are based on VTAE curriculum. High school teachers who teach these courses are considered VTAE part-time instructors and are certified by the VTAE System. They are paired with peer instructors from MPTC who serve as communication links between the two schools, visit the high school class, and assist with student surveys and course evaluation. Students do not pay additional fees for these courses; however, the high school pays the VTAE district for tuition and fees and the VTAE district pays for the cost of instruction in an amount equal to the cost of tuition and fees. In 1990 the program served 454 students in courses such as *Principles of Data Processing*, accounting, sociology, *Psychology of Human Relations*, and *Written and Oral Technical Communications*. Future directions of MPTC Tech-Prep efforts include: (1) a 2+2 model that results in students obtaining an associate degree and entering the workplace or continuing on for a baccalaureate degree, and (2) an occupation-specific Vocational Diploma Plus Program that prepares students to enter the workplace after high school graduation or to enroll in an associate degree program at the vocational school.

Contact Person: Judith Neill, Associate Dean, Instructional Design/Development, 235 North National Avenue, P.O. Box 1940, Fond du Lac, WI 54936-1940, (414) 922-8611.

Fox Valley Technical College and Oshkosh Area School District

Fox Valley Technical College and Oshkosh Area School District offer advanced standing/dual credit courses to high school students. The courses are taught at the high school by high school teachers. The curriculum is based on VTAE competencies within each discipline area, but delivered through methods determined by high school teachers. As expected, it is difficult to find high school teachers who are occupationally certifiable by the VTAE System. A key to program success, however, has been the insistence that all partners are equal partners.

Future goals for FVTC include strengthening linkages between the technical college, high schools, and employers during the next five years. FVTC expects to have 2+2 programs with eight high schools by 1991 and a 2+2+2 system in place within two years.

Contact Persons: Merlin Gentz, Vice President, Academic Affairs, Fox Valley Technical College, 1825 Bluemound Drive, P.O. Box 2277, Appleton, WI 54913-2277, (414) 735-5600 and Ted Sehmer, Local Vocational Education Coordinator, Oshkosh Area School District, 1600 Southland Avenue, P.O. Box 3048, Oshkosh, WI 54903, (414) 424-4055.

Apprenticeship Programs in Wisconsin

The Bureau of Apprenticeship Standards within the Department of Industry, Labor and Human Relations has recently developed a plan to modernize the state's 80-year-old apprenticeship system. The need for this resulted from the changes in skill requirements of jobs, demographics (including the increased number of youth), service sector growth, and the mobility of the labor force. The plan includes two major program changes for the system, which are to: (1) utilize the state's extensive labor market information capabilities to design a sound strategy for apprenticeship and growth, and (2) establish better linkages with different industrial sectors and with other elements of the employment and training system in order to improve program access for both employers and potential apprentices.

The first stage of the plan's implementation consisted of: (1) revising and updating local apprenticeship sponsors' affirmative action/equal employment opportunity plans; (2) reviewing testing policy for entry into apprenticeship programs; (3) providing technical assistance to programs for preparing women and people of color for skilled trades, and (4) reexamining the

Bureau's responsibilities for curriculum standardization, delivery, and development in conjunction with the VTAE System.

Contact person: LaMarr Q. Billups, Director, Bureau of Apprenticeship Standards, DILHR, 201 E. Washington Avenue, P.O. Box 7972, Madison, WI 53707, (608) 266-3331.

The German Restructured School System

Task Force member Mary Braithwaite visited Germany in the fall of 1990. She reported that the German school system was undergoing restructuring in an attempt to better meet students' academic and social/emotional needs. From grades five through ten, six teachers work with 90 students; each teacher provides instruction in two or three subject areas during the six-year-period. As a result, the team small-group model, which uses collaboration and cooperative learning as its base, teaches students to work as effective team members, take responsibility for their own academic performance, and find their own motivation for learning.

Contact person: Mary Braithwaite, Mathematics Instructor, Western Wisconsin Technical College, 304 North Sixth Street, P.O. Box 908, La Crosse, WI 54602-0908, (608) 785-9200.

Commission on Schools for the 21st Century

The Commission on Schools for the 21st Century is a broad based group with 76 members representing citizen groups and educational organizations and institutions. The Commission's "School to Work Transition" Decision Initiatives relate directly to the work of the Task Force and are referenced in the recommendations. They include:

- 201B which recommends that 11th and 12th grade students, having mastered a prescribed set of common learner outcomes by the end of 10th grade, be offered multiple learning options designed to meet their special talents and interests;
- 409 which recommends that alternative teacher licensure methods be explored to allow non-education college graduates, particularly with career success and expertise in their chosen field, to teach;
- 505 which requires all school districts to provide students in grades 6 to 12 with access to career interest assessment;
- 603A which recommends implementation of a comprehensive apprenticeship system available to all students beginning in grade 7;
- 705A which recommends establishment of a Technical Preparation program through the DPI and VTAE System; and
- 705B which requires demonstrated awareness of vocational studies for all teachers.

Contact person: Jim Morgan, Commission Staff Member and Executive Director for Communications, Wisconsin Manufacturers and Commerce, 501 E. Washington Avenue, Madison, WI, 53701 (608) 258-3400.

WBVTAE/WDPI Technical Preparation Projects

During fiscal year 1991, seven Tech-Prep projects were funded by the Wisconsin Board of Vocational, Technical and Adult Education and the Wisconsin Department of Public Instruction. As stated in the "Application Guidelines," the Tech-Prep program model is intended to be parallel with, and not to replace, the current college-prep program. It combines a common core of academic courses with technical education programs resulting in an applied curriculum. The projects were selected according to occupational areas and incorporation of occupational preparation, general preparation, and student services counseling. Each project was funded at $100,000 and outcomes included: (1) competency based curriculum in a vocational program and related general education courses; (2) curriculum which is sequential from secondary through the VTAE postsecondary school; (3) agreements that will establish the process for advanced standing between the VTAE districts and the neighboring secondary schools for specific program offerings related to a specific occupational goal; and (4) planned, ongoing counseling, career information, and marketing.

Contact persons: Glenn Davison, Assistant Director, WBVTAE, 310 Price Place, P.O. Box 7874, Madison, WI 53707, (608) 266-1207 and Richard Dignan, Director, Bureau for Vocational Education, DPI, 125 South Webster Street, P.O. Box 7841, Madison, WI 53707-7841, (608) 266-3390.

Education for Employment Standard and Programs in Wisconsin

The Education for Employment Standard was mandated in 1984 based on the Parker Pen Project recommendations, economic conditions, and workforce requirements and needs. By September 1989, all school districts were to have an Education for Employment plan developed that fully integrated the concept into

all grades, kindergarten through 12. Implementation of the plan is to occur by September 1991. Districts are currently being audited according to the: (1) time allocated to the Education for Employment coordinator; (2) appointment, representation, and involvement of the Education for Employment Council; (3) Education for Employment plan including the mission statement, student needs and interests, labor market information, economic development, graduate follow-up information, evaluation of current programs, and staff development needs; (4) level of integration of Education for Employment components into the curriculum.

Based on audits conducted thus far, it seems that in some school districts, Education for Employment is viewed as a separate program. Additional staff development is necessary to integrate Education for Employment into all curricula so that students will be better prepared to enter the workforce.

Contact person: Linda Cate, Education for Employment Consultant, DPI, 125 South Webster Street, P.O. Box 7841, Madison, WI 53707-7841, (608) 266-3390.

Tech-Prep Model Development at Gateway Technical College and Three High Schools

In July 1990, representatives from Gateway Technical College, Badger High School, Delavan-Darien High School, and Elkhorn Area High School held a workshop to establish a model for Tech-Prep development. During their three-day meeting, instructional staff members from the four schools, the DPI, and the SBVTAE discussed and exchanged ideas regarding the implementation of Tech-Prep programs. After identifying the benefits and barriers to Tech-Prep efforts, participants prioritized issues and identified solutions within four categories that influenced Tech-Prep programs: (1) marketing, (2) instruction, (3) curriculum, and (4) operation. The group developed the model's framework which included mission statements, goals, implementation strategies, and curriculum for each institution. The last step in the model was actually designing Tech-Prep programs and course sequences between GTC and the three high schools. Four external educators evaluated the model and their feedback was incorporated into the final report.

Further, the group made four recommendations for future use of the model, which were to: (1) accept this model development framework and process for standardization for schools throughout the state; (2) make a financial commitment to the local school districts and the technical colleges to proceed with a refinement and implementation of their unique Tech-Prep models; (3) derive local school district and technical college board, administrative, and faculty commitment to proceed with the refinement and implementation of the unique Tech-Prep models; and (4) provide leadership and support for the development and implementation of the Tech-Prep model by the LVEC since the Education for Employment program has common elements with the Tech-Prep program. (This section was taken from the handout, "Development of a Tech-Prep Model," August, 1990, which was provided to Task Force members.)

Contact person: Nicholas Covelli, Vice President of Educational Services and Research, Planning and Evaluation, GTC, 3520 30th Avenue, Kenosha, WI 53142-1690, (414) 656-6900.

Governor's Commission for a Quality Workforce

The economic and employment conditions of the next decade have raised concern among policymakers, educators, business and industry representatives, and citizens regarding the adequacy of the Wisconsin workforce to remain competitive in the world marketplace. As a result of these concerns, the Governor's Commission for a Quality Workforce was established. The Commission's purposes were to: (1) conduct research and establish procedures which will determine the present and future skill needs of Wisconsin employers and strengthen the partnership between business and education, (2) make recommendations to address potential labor shortages, and (3) develop recommendations to strengthen the involvement of business and industry with the VTAE System.

Activities of the Commission included: (1) surveying 3,500 Wisconsin businesses in an effort to identify Wisconsin's present and future workforce skill needs and to determine employers' perceptions of their relationship with state-funded training programs and (2) raising funds for Commission activities. The Commission's report was released in February 1991.

Contact person: Carl Weigell, Commission Chair or Dennis Nitschke, Commission Staff Member, WBVTAE, 310 Price Place, P.O. Box 7874, Madison, WI 53707, (608) 266-1207.

Governor's Commission on Minority Participation in Vocational-Technical Education

This Commission was charged with: (1) making recommendations regarding recruitment, retention and graduation of minority students in the VTAE System; (2) developing a strategic plan for minority student and staff participation in the VTAE System; (3) recommending a plan to increase the number of minority graduates in well-paying, skilled positions; and (4) establishing a plan to improve collaboration and communication among the various agencies responsible for these efforts. In November 1990 the Commission made 16 recommendations to the Governor for providing full participation and support for minority students in the VTAE System. These recommendations stemmed from the economic necessity for the state to address minority students' needs since the combined enrollment of African Americans, American Indians, Hispanics, and Southeast Asians was 10.5 percent, while less than 3 percent of those students were enrolled in the 20 highest paying occupational training programs.

Of the 16 recommendations of the Commission, four related most directly to the work of the Task Force. These included: (1) increasing minority student enrollment and completion of occupational programs in high demand occupations (Rec. #3); (2) improving the racial climate by promoting a positive multicultural environment on VTAE campuses (Rec. #8); (3) designing, through the DPI/VTAE Task Force on Implementing Occupational Options, a model program to prepare minority youth for postsecondary training and the world of work (Rec. #13); and (4) increasing and accelerating minority student completion in college parallel programs.

Contact person: Linda Stewart, Commission Staff Member and Executive Assistant to the State Director, WBVTAE, 310 Price Place, P.O. Box 7874, Madison, WI 53707, (608) 266-1207.

High Technology Training Model Project

The goal of the High Technology Training Model Project conducted by the Center for Vocational, Technical and Adult Education at UW-Stout was to develop a curriculum model designed to effectively identify the technology training needs of local business and industry and to provide students at the secondary and postsecondary level with the requisite skills, knowledge, and attitudes based on these identified needs. Forty-four West Central Wisconsin educators participated in the 18-month cooperative demonstration project funded by the U.S. Department of Education. An objective of the project was to facilitate interaction between educators and businesspersons in rural areas. As an outcome of the project, a transportable model that can be adapted to other states was developed. Final products included: (1) the modules developed by the participating teachers and instructors and (2) the handbook which identified processes used to monitor technological changes in business and industry and to develop instructional modules listing the competencies in response to these changes.

Contact person: Orville Nelson, Project Director, CVTAE, UW-Stout, 218 Applied Arts Building, Menomonie, WI 54751, (715) 232-1382.

Wisconsin Automobile and Truck Dealers Association TECH Project

The WATDA is a trade association representing nearly 1000 Wisconsin car and truck dealers. In the late 1980s, the association recognized the need to become more involved in the occupational training of their employees because of: (1) the crucial shortage of qualified, professional vehicle technicians available (since the high caliber student is usually encouraged to enroll in a four-year college); (2) the discontinuation of many vocational-technical auto shop programs due to fewer students; and (3) the inadequate wages of technicians. Based on these factors, WATDA established an ad hoc Education Committee of dealership personnel, DPI and VTAE staff members, and representatives from school board, school counselor, and school administrator associations. In addition to public relations and media efforts, the association has taken a primary role in preparing individuals for the service technician position by establishing a scholarship/employment program between technical colleges and dealers. In the future WATDA hopes to expand the scholarship program, develop a teacher academy, and begin a 2+2 Tech-Prep program. The latter would provide students with the opportunity to work in a dealership in high school and technical college and receive some tuition reimbursement for technical college courses.

Contact person: Gary Williams, President or Eloise Hein, Education Coordinator, WATDA, 25 W. Main, P.O. Box 5345, Madison, WI 53705, (608) 251-5577.

C. Glossary of Terms

Definitions of the following terms are provided for clarity and consistency in this report.

Advanced standing

Advanced standing is a process through which a student may be eligible to receive credit for all or part of a course due to competencies mastered previously. The determination of advanced standing is made by each technical college upon a student's enrollment in a program. Advanced standing avoids unnecessary duplication of instruction and student learning.

Applied academics

Courses such as principles of technology, applied mathematics, applied science, language arts and communications, and applied social studies that focus on subject-matter concepts as they are applied to real-world problem solving.

Dual credit courses

High school courses for which students receive both high school and technical college credit. Curriculum for these courses is competency based and developed jointly between the two educational systems.

Gateway assessment

The gateway assessment is a component of outcome based education which serves as the bridge between K-10 academic insturction and formal options in education beginning in 11th grade. After achieving a predetermined mastery level of outcomes, students are offered formal options for further education.

Individualized Education Program (IEP)

The IEP is a written plan endorsed by the parent(s) which describes the educational objectives for and the special services, including school-to-work transitional services, to be delivered to each student with exceptional education needs (EEN).

Internship

Internship refers to postsecondary work-based learning in which a partnership is established between the technical college, an employer or business, and the student for the purpose of providing practical education to the student through productive work opportunities. A signed agreement between all parties outlining a student's cooperative learning plan is a necessary component of an internship.

School-supervised work experience

School-supervised work experience is a work-based learning arrangement whereby secondary students receive practical education in the workplace which supplements their classroom instruction in an occupational area. The school-supervised work experience must be part of a student's educational plan developed with the school, the employer, and the student and parents.

Work-based learning

Work-based learning is a general term encompassing cooperative vocational education, internship, externship, school-supervised work experience, on-the-job training, employee and management training, practicum, apprenticeship, and apprenticeship-like programs. Its purpose is to provide individuals with opportunities to learn in the workplace while simultaneously receiving formal instruction. Work-based learning is incorporated to varying degrees in the above-mentioned programs; apprenticeship programs utilize work-based learning as their major instructional method supplemented by classroom teachings, while internships rely more on classroom instruction with students having opportunities to practice their skills in the workplace.

Photographs and Acknowledgements

Photographs

Page 6
What does the future hold for her when she enters the workforce in 2008? (Photograph courtesy of Madison Area Technical College.)

Page 7
Changes in the workplace will require workers with advanced technical skills and higher level thinking skills. (Photograph courtesy of Madison Area Technical College.)

Page 9
Popular reading materials that emphasize enrollment in a four-year college for all students. (Articles courtesy of *Baby Talk* magazine, *Better Homes and Gardens* magazine, and *MetroPARENT: The Parenting Magazine for Active Families*.)

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New technologies will require new training. (Photograph courtesy of Madison Area Technical College.)

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